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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/509,085

Applicant(s)

APPLEBY, STEPHEN C

Examiner

Eunice Ng

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. In response to the Office Action mailed 8/7/07, Applicants have submitted an Amendment, filed 12/7/07, amending claims 1-3, 5-8 and 10-16, without adding new matter, and arguing to traverse claim rejections.

Specification

2. The abstract of the disclosure has been amended, but is still objected to because of the following informalities: The form and legal phraseology often used in patent claims, such as "said," should be avoided. Appropriate correction is required.

Claim Objections

3. Claims 3, 13 and 15 are objected to because of the following informalities: In line 2 of claim 3, "means to jointly selects" should be --means jointly selects--. In the second to last line of claim 13, "translatin units" should be --translation units--. In line 1 of claim 15, the examiner suggests replacing "computer program store" to --computer-readable medium--.

Response to Arguments

4. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection, below.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 13 and 14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6 and 7 of copending Application No. 10/508,418 in view of Nii (US Patent No. 5,659,765). Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claim 13 in the instant application corresponds to claim 6 of copending Application No. 10/508,418 since all the limitations of claim 13 of this application are also present in claim 6 of copending Application No. 10/508,418. Claim 6 of copending Application No. 10/508,418 recites, “A computer natural language system...comprising: means for inputting source language text; ... and said dependency data in transforming the analysis of said source text into an analysis for said target language” (entire claim), which corresponds to claim 13 of this application, “A computer natural language translation system, comprising: means for inputting source language

text; ... and said dependency data in transforming the analysis of said source text into an analysis for said target language” (lines 1-19 of the claim).

Copending Application No. 10/508,418 does not teach lines 20-23 of claim 13 in the instant application, “said transfer means including means for rejecting pairs of source language words and target language words...into translation units which can be used for translation.” However, Nii teaches this feature (col. 14, line 66 – col. 15, line 6, teaches, “the parts...in the parts link information do not coincide with any parts of the original sentence [not possible to decompose the source and target language texts into translation units which can be used for translation]...In this case, the parts having <****> attached thereto are not required and hence deleted...resultant sentence is output as a translation result”; col. 16, ll. 15-26, “English-to-Japanese dictionary management section and...Japanese-to-English dictionary management section...deletion...of words with respect to the English-to-Japanese dictionary and the Japanese-to-English dictionary”). It would have been obvious for one of ordinary skill in the art at the time the invention was made to include the teachings of Nii because this feature would assist in minimizing the storage and processing resources required.

Claim 14 in the instant application corresponds to claim 7 of copending Application No. 10/508,418 since all the limitations of claim 14 of this application are also present in claim 7 of copending Application No. 10/508,418. Claim 7 of copending Application No. 10/508,418 recites, “A computer language translation development system, for developing data for use in translation, said system comprising: means for allowing corresponding source and target example texts to be linked into source and target language dependency graphs; means for allowing corresponding translatable nodes of said source and target language dependency graphs

representing translatable parts of the source and target language texts to be aligned; and means for automatically generating, from said source and target language dependency graphs, respective associated surface representative graph having a tree structure" (entire claim), which corresponds to claim 14 this application, "A computer language translation development system, for developing data for use in translation, said system comprising: linking means which links (a) corresponding source and (b) target example texts into source and target language dependency graphs; aligning means which aligns (a) corresponding translatable nodes of said source and target language dependency graphs representing translatable parts of the source and (b) target texts" (lines 1-7 of the claim), and "means for automatically generating...respective associated surface representative graph having a tree structure" (lines 12-14 of the claim). Copending Application No. 10/508,418 does not teach lines 8-11 of claim 14 in the instant application, "said aligning means includes means for rejecting pairs of source language words and target language words...which can be used for translation." However, Nii teaches this feature, as discussed above with respect to claim 13.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nii (US Patent No. 5,659,765).

Regarding claims 1 and 15, Nii teaches a computer natural language translation system and computer-readable medium, comprising: means for inputting source language text (Fig. 3, element 3, “input section”; Fig. 15A, element 141, “original sentence”); means for outputting target language text (Fig. 15D, element 147, “generated translated sentence”); and transfer means for generating said target language text from said source language text using stored translation data generated from examples of source and corresponding target language texts (Figure 15A, element 142; col. 26, ll. 20-39, “bilingual correspondence data”), the transfer means being using data defining a plurality of stored translation units each consisting of a small number of ordered words and/or variables in both the source and the target language (Fig. 15A, parts link information), and

development means for inputting new examples of source and corresponding target language texts (col. 6, ll. 16-22; translation examples can be learned), and adding new translation units based thereon (col. 11, ll. 60-65; recording the units of words or sentences), the development means being arranged:

applying said stored translation data to a new example of source and corresponding target language texts (col. 11, line 65 – col. 12, line 55, Bilingual Correspondence Learning Section; particularly col. 12, ll. 30-40, which teaches unit linking applied to new source language text), to generate for each at least one analysis comprising analysis data indicating the dependencies of words therein (see col. 13, ll. 24-36; and col. 13, line 63 – col. 14, line 8, parts of speech indicating matching semantics between translation units);

calculating, for each one of a plurality of source words in the source language text, a measure of affinity between each word in the target language text and each such source language word (col. 15, ll. 10-36 and 48-53, teaches input Japanese sentence and character string 1, and bilingual correspondence database containing the corresponding translation units, as well as a similarity [affinity] calculation);

pairing source language words with target language words on the basis of the measures thus calculated (col. 8, ll. 55-58, teaches record testing section, learning testing, and translation subsystem; col. 13, line 50 – col. 15, line 7, comparison result for coincidence and match), and

rejecting pairs of source language words and target language words in the event that such pairs would result in it not being possible to decompose the source and target language texts into translation units which can be used for translation (col. 14, line 66 – col. 15, line 6, teaches, “the parts...in the parts link information do not coincide with any parts of the original sentence [not possible to decompose the source and target language texts into translation units which can be used for translation]...In this case, the parts having <****> attached thereto are not required and hence deleted...resultant sentence is output as a translation result”; col. 16, ll. 15-26, “English-to-Japanese dictionary management section and...Japanese-to-English dictionary management section...deletion...of words with respect to the English-to-Japanese dictionary and the Japanese-to-English dictionary”); and

forming new translation units, each comprising a remaining paired word and those words and/or variables in both the source and the target language analyses which depend upon it (col. 11, line 65 – col. 13, line 16, Bilingual Correspondence Learning Section; specifically, col. 12, line 57 – col. 13, line 16, new parts linking information).

Regarding claim 2, Nii teaches in which the development means generates a plurality of said analyses in at least one of the source and target language, and to select one pair of analyses from which to form said new translation units (Fig. 15A – 15D, illustrates parts link information, including generated possible target texts, plurality of analyses; Fig. 15D, elements 145, 146 and 147; element 147 teaches translation produced by the analysis, and corresponding parts to the original sentence).

Regarding claim 3, Nii teaches in which the development means jointly selects the pair of analyses and the pairing of said source and target words (Fig. 15A – 15D, illustrates parts link information, including generated possible target texts, plurality of analyses; Fig. 15D, elements 145, 146 and 147, teach translation produced by the analysis, and corresponding parts to the original sentence).

Regarding claim 4, Nii teaches in which said analysis data represents, or can be converted into, a tree structure indicating the dependencies of words therein (Fig. 9, dependency graph, and Fig. 1, tree structure).

Regarding claim 5, Nii teaches in which the development means performs said analyses using the stored translation units (Figure 15A, element 142; col. 26, ll. 20-39, “bilingual correspondence data”).

Regarding claim 6, Nii teaches in which the development means calculates said measures of affinity using the stored translation units (col. 15, ll. 10-36 and 48-53, teaches input Japanese sentence and character string 1, and bilingual correspondence database [stored translation units] containing the corresponding translation units, as well as a similarity [affinity] calculation).

Regarding claim 7, Nii teaches in which the development means calculates said measures of affinity using a lexicon database through which translations in said source and target languages can be identified (col. 15, ll. 10-36 and 48-53, teaches input Japanese sentence and character string 1, and bilingual correspondence database containing the corresponding translation units, as well as a similarity [affinity] calculation; see also Fig. 3, element 5, dictionary database).

Regarding claim 8, Nii teaches in which the development means calculates said measures of affinity using semantic and/or syntactic analysis (col. 13, ll. 24-35 and col. 13, line 63 – col. 14, line 8, teach part of speech indicating matching semantics between translation units, wherein the translation is performed based on the analysis of these dependent semantic corresponding translation units).

Regarding claim 9, Nii teaches wherein the measure of affinity is a measure of the probability that each word in the target language text is a translation of each respective source language word (col. 15, ll. 10-36 and 48-53, teaches input Japanese sentence and character string 1, and bilingual correspondence database containing the corresponding translation units, as

well as a similarity calculation [probability that each word in the target language text is a translation of each respective source language word]).

Regarding claim 10, Nii teaches in which the development means performs said pairing in order of probability of correspondence from the highest probability, using said measures of probability (col. 15, ll. 10-53, teaches input Japanese sentence and character string 1, and bilingual correspondence database containing the corresponding translation units; as well as a similarity calculation: “the sentence numbers of a plurality of bilingual correspondences extracted from the bilingual correspondence database are arranged in the order of the similarities upon similarity calculation, and comparison is sequentially performed in the order of the decreasing similarity [probability of correspondence from the highest probability],” as discussed in col. 15, ll. 48-53).

Regarding claim 11, Nii teaches in which, after each said pairing, the development means performs a word order analysis and to reject future pairings which would violate a word order criterion (see Fig. 9; and col. 13, ll. 51-54, teaches the “learning testing section performs management processing such as...deletion...and retrieval of parts link information and the like recorded on the bilingual correspondence database.” For example, in col. 14, line 66 – col. 15, line 6, “the parts...in the parts link information do not coincide with any parts of the original sentence [would violate a word order criterion]...In this case, the parts having <****> attached thereto are not required and hence deleted...resultant sentence is output as a translation result”).

Regarding claim 12, Nii teaches a method of obtaining new translation units for a computer translation system, from examples of source and corresponding target language texts, said method comprising: analysing the texts to obtain dependency relationships between language units thereof (see col. 13, ll. 24-36; and col. 13, line 63 – col. 14, line 8, parts of speech indicating matching semantics between translation units);

matching words of one text against all those of the other, to generate scores (col. 15, ll. 10-36 and 48-53, teaches input Japanese sentence and character string 1, and bilingual correspondence database containing the corresponding translation units, as well as a similarity calculation);

pairing words of the respective texts using said scores (col. 8, ll. 55-58, teaches record testing section, learning testing, and translation subsystem; col. 13, line 50 – col. 15, line 7, comparison result for coincidence and match);

rejecting pairs of source language words and target language words in the event that such pairs would result in it not being possible to decompose the source and target language texts into translation units which can be used for translation (col. 14, line 66 – col. 15, line 6, teaches, “the parts...in the parts link information do not coincide with any parts of the original sentence [not possible to decompose the source and target language texts into translation units which can be used for translation]...In this case, the parts having <****> attached thereto are not required and hence deleted...resultant sentence is output as a translation result”; col. 16, ll. 15-26, “English-to-Japanese dictionary management section and...Japanese-to-English dictionary management section...deletion...of words with respect to the English-to-Japanese dictionary and the Japanese-to-English dictionary”); and

providing new translation units using the paired words, and language units in each of the languages derived from the analyses (col. 11, line 65 – col. 13, line 16, Bilingual Correspondence Learning Section; specifically, col. 12, line 57 – col. 13, line 16, new parts linking information).

Regarding claim 13, Nii teaches a computer natural language translation system, comprising: means for inputting source language text (Fig. 3, element 3, “input section”; Fig. 15A, element 141, “original sentence”); means for outputting target language text (Fig. 15D, element 147, “generated translated sentence”); transfer means for generating said target language text from said source language text using stored translation data generated from examples of source and corresponding target language texts (Figure 15A, element 142, “bilingual correspondence data”; col. 26, ll. 20-39), wherein said stored translation data comprises a plurality of translation components (Fig. 15A, parts link information), each comprising:

surface data representative of the order of occurrence of language units in said component (see Fig. 9, col. 13, ll. 24-36, and col. 13, line 63 – col. 14, line 8);

dependency data related to the semantic relationship between language units in said component (col. 13, ll. 24-36; and col. 13, line 63 – col. 14, line 8, parts of speech indicating matching semantics between translation units),

the dependency data of language components of said source language being aligned with corresponding dependency data of language components of said target language (Fig. 9; col. 8, ll. 55-58, teaches record testing section, learning testing, and translation subsystem; col. 13, line 50 – col. 15, line 7, comparison result for coincidence and match); and

said transfer means is arranged to use said surface data of said source language in analysing the source language text, and said surface data of said target language in generating said target language text, and said dependency data in transforming the analysis of said source text into an analysis for said target language (see Figs. 9-15D; col. 13, ll. 24-36, and col. 13, line 63 – col. 14, line 8; col. 8, ll. 55-58, teaches record testing section, learning testing, and translation subsystem; col. 13, line 50 – col. 15, line 7, comparison result for coincidence and match); and

said transfer means including means for ejecting pairs of source language words and target language words in the event that such pairs would result in it not being possible to decompose the source and target language texts into translation units which can be used for translation (col. 14, line 66 – col. 15, line 6, teaches, “the parts...in the parts link information do not coincide with any parts of the original sentence [not possible to decompose the source and target language texts into translation units which can be used for translation]...In this case, the parts having <****> attached thereto are not required and hence deleted...resultant sentence is output as a translation result”; col. 16, ll. 15-26, “English-to-Japanese dictionary management section and...Japanese-to-English dictionary management section...deletion...of words with respect to the English-to-Japanese dictionary and the Japanese-to-English dictionary”).

Regarding claim 14, Nii teaches a computer language translation development system, for developing data for use in translation, said system comprising: linking means which links (a) corresponding source and (b) target example texts into source and target language dependency graphs (Fig. 9, dependency graph); aligning means which aligns (a) corresponding translatable

nodes of said source and target language dependency graphs representing translatable parts of the source and (b) target texts (Fig. 9, dependency graph; and as discussed in the rejection of claim 1);

said aligning means includes means for rejecting pairs of source language words and target language words in the event that such pairs would result in it not being possible to decompose the source and target language texts into translation units which can be used for translation (col. 14, line 66 – col. 15, line 6, teaches, “the parts...in the parts link information do not coincide with any parts of the original sentence [not possible to decompose the source and target language texts into translation units which can be used for translation]...In this case, the parts having <****> attached thereto are not required and hence deleted...resultant sentence is output as a translation result”; col. 16, ll. 15-26, “English-to-Japanese dictionary management section and...Japanese-to-English dictionary management section...deletion...of words with respect to the English-to-Japanese dictionary and the Japanese-to-English dictionary”); and means for automatically generating, from said source and target language dependency graphs, respective associated surface representative graph having a tree structure (Fig. 9, dependency graph, and as in Fig. 1, tree structure).

Regarding claim 16, Nii teaches an apparatus for inferring new translation units which will allow a given source text to translate as a given target text, said apparatus comprising: a database of translation units (see Fig. 3, element 56, bilingual correspondence database);

means for analyzing both the source text and the target text into one or more alternative representations using these units (Fig. 15A – 15D, illustrates parts link information, including generated possible target texts);

means for indicating and scoring lexical alignments between the source and target texts (col. 15, ll. 10-53, teaches input Japanese sentence and character string 1, and bilingual correspondence database containing the corresponding translation units, as well as a similarity calculation);

means for selecting one of the alternative source analyses and one of the alternative target analyses based on the scored alignments (for example, Fig. 15D; element 147 teaches translation produced by the analysis, and corresponding parts to the original sentence); and

means for inferring one or more translation units based on the selected source analysis, the target analysis and the alignment (Fig. 15A – 15D; element 147 teaches translation produced by the analysis, and corresponding parts to the original sentence); and

means for inferring including means for rejecting pairs of source language words and target language words in the event that such pairs would result in it not being possible to decompose the source and target language texts into translation units which can be used for translation (col. 14, line 66 – col. 15, line 6, teaches, “the parts...in the parts link information do not coincide with any parts of the original sentence [not possible to decompose the source and target language texts into translation units which can be used for translation]...In this case, the parts having <****> attached thereto are not required and hence deleted...resultant sentence is output as a translation result”; col. 16, ll. 15-26, “English-to-Japanese dictionary management

section and...Japanese-to-English dictionary management section...deletion...of words with respect to the English-to-Japanese dictionary and the Japanese-to-English dictionary").

Regarding claim 17, Nii teaches wherein said alternative representations are tree representations or representations that can be converted into tree representations (Fig. 1, tree representation).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eunice Ng whose telephone number is 571-272-2854. The examiner can normally be reached on Monday through Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. N./
Examiner, Art Unit 2626

/David R Hudspeth/
Supervisory Patent Examiner, Art Unit 2626